

**What is claimed is:**

1       1. A method for changing a rotational speed of an  
2       optical drive comprising:

3              detecting a reading speed for a software processing  
4              data from a disc in the optical drive;  
5       determining whether the reading speed corresponding to  
6              a rotational speed of the optical drive exceeds a  
7              critical speed, wherein the critical speed is less  
8              than the lowest rotational speed of the optical  
9              drive to process a read command and exceeding a  
10             reading speed for the optical drive to process a  
11             play command; and

12             changing the rotational speed of the optical drive  
13             according to the determined result of the reading  
14             speed and the critical speed.

1       2. The method as claimed in claim 1, wherein the  
2       changing step comprises:

3              when the reading speed corresponding to the rotational  
4              speed of the optical drive exceeds the critical  
5              speed, changing the rotational speed of the  
6              optical drive to a high speed; and

7              when the reading speed corresponding to a rotational  
8              speed of the optical drive is less than the  
9              critical speed, changing the rotational speed of  
10             the optical drive to a low speed.

1       3. The method as claimed in claim 1, wherein the  
2       determining step further comprises:

3 calculating a number of frames read in a predetermined  
4 period; and  
5 according to the amount, calculating the relationship  
6 between the reading speed and the rotational speed  
7 of the optical drive.

1 4. The method as claimed in claim 3, wherein when the  
2 number of frames is 75 and the predetermined period is 1  
3 second, the reading speed is equal to 1 times the rotational  
4 speed of the CD ROM drive.

1 5. The method as claimed in claim 3 further  
2 comprising:

3 determining whether the two continuous frames comprise  
4 two continuous data according to addresses of the  
5 optical drive where the frame read the data;  
6 when the continuous frames do not comprise continuous  
7 data, resetting the number of frames read and the  
8 predetermined period.

1 6. The method as claimed in claim 2, wherein when the  
2 optical drive reads an audio disc, the high speed is 10~24 X  
3 CAV (Constant Angular Velocity) wherein the rotational speed  
4 on the maximum circle of the optical drive is 24X CAV and on  
5 the minimum circle of the optical drive is 10X CAV and the  
6 low speed is 2~5 X CAV wherein the rotational speed on the  
7 maximum circle of the optical drive is 5X CAV and on the  
8 minimum circle of the optical drive is 2X CAV.

1 7. The method as claimed in claim 2, wherein when the  
2 optical drive reads a video compact disc, the high speed is

3       10~24 X CAV wherein the rotational speed on the maximum  
4       circle of the optical drive is 24X CAV and on the minimum  
5       circle of the optical drive is 10X CAV and the low speed is  
6       2~5 X CAV wherein the rotational speed on the maximum circle  
7       of the optical drive is 5X CAV and on the minimum circle of  
8       the optical drive is 2X CAV.

1           8. The method as claimed in claim 1, wherein the  
2       reading speed for the optical drive to process the play  
3       command is 1X.

1           9. The method as claimed in claim 1, wherein the  
2       lowest rotational speed of the optical drive to process the  
3       read command is 2X.

1           10. A optical drive with switchable rotational speeds,  
2       the optical drive controlled by a software, comprising:  
3              a read module for reading a disk;  
4              an motor module loaded with the disc for rotating the  
5              disk at a rotational speed; and  
6              a control module coupled to the motor module for  
7              detecting a reading speed for the software  
8              processing data from the disc, determining whether  
9              the reading speed corresponding to a rotational  
10             speed of the optical drive exceeds a critical  
11             speed and changing the rotational speed of the  
12             optical drive according to the determined result  
13             of the reading speed and the critical speed;  
14             wherein the critical speed is less than the lowest  
15             rotational speed of the optical drive to process a

16           read command and exceeding a reading speed for the  
17           optical drive to process a play command.

1           11. The optical driver as claimed in claim 10, wherein  
2           when the reading speed corresponding to the rotational speed  
3           of the optical drive exceeds the critical speed, the control  
4           module changes the rotational speed of the optical drive to  
5           a high speed and when the reading speed corresponding to the  
6           rotational speed of the optical drive is less than the  
7           critical speed, the control module changes the rotational  
8           speed of the optical drive to a low speed.

1           12. The optical driver as claimed in claim 10, wherein  
2           when the optical drive reads an audio disc, the high speed  
3           is 10~24 X CAV (Constant Angular Velocity) wherein the  
4           rotational speed on the maximum circle of the optical drive  
5           is 24X CAV and on the minimum circle of the optical drive is  
6           10X CAV and the low speed is 2~5 X CAV wherein the  
7           rotational speed on the maximum circle of the optical drive  
8           is 5X CAV and on the minimum circle of the optical drive is  
9           2X CAV.

1           13. The optical driver as claimed in claim 10, wherein  
2           when the optical drive reads a video compact disc, the high  
3           speed is 10~24 X CAV wherein the rotational speed on the  
4           maximum circle of the optical drive is 24X CAV and on the  
5           minimum circle of the optical drive is 10X CAV and the low  
6           speed is 2~5 X CAV wherein the rotational speed on the  
7           maximum circle of the optical drive is 5X CAV and on the  
8           minimum circle of the optical drive is 2X CAV.

1       14. The optical driver as claimed in claim 10 wherein  
2 the reading speed for the optical drive to process the play  
3 command is 1X.

5       15. The optical driver as claimed in claim 10 wherein  
the lowest rotational speed of the optical drive to process  
the read command is 2X.